News focus

Frustration over science at the policy high table

Researchers believe the growing evidence of the effect of greenhouse gas emissions on the environment demand a stronger link between issues and policymakers. **Nigel Williams** reports.

With a critical meeting in Montreal at the end of the month to consider new agreements on limiting greenhouse gas emissions under the Kyoto protocol, researchers are highlighting the broader policy impacts of the many failures to address these issues adequately. Several key countries have not signed up to the protocol including the US, Australia and other key Asian and developing countries.

Australia's environment minister, Ian Campbell, has already said at the end of last month that the country has no intention of signing up to a new round of the Kyoto protocol.

"The concept of getting up another negotiation process for caps, targets and timetables is a terrible waste of time," he said.

Campbell will be among officials from 150 countries to attend the Montreal meeting to discuss how to take the Kyoto protocol beyond 2012, when the first phase ends. One of the aims of the meeting will be to work out how to entice developing nations to curb greenhouse gas emissions.

Many researchers believe the evidence is building to warrant a major response and, in an open letter published ahead of a G8 meeting of environmental ministers in London earlier this month to discuss climate change ahead of the Montreal meeting, Robert May, president of the Royal Society, aimed to ramp up the issue by pointing out that the hard-won increase in aid for Africa agreed at the Scotland summit of the G8 nations in July may be entirely consumed by the cost of dealing with climate change.

The letter from Lord May urged the G8 ministers to recognise the impacts of increasing drought conditions in Ethiopia and more severe hurricanes in the United States that may already be occurring due to climate change, and to agree further action to combat greenhouse gas emissions. The meeting was the first to be held since the G8 leaders agreed in Scotland to establish a 'dialogue' on climate change and was addressed by the British prime minister, Tony Blair, and the head of the World Bank, Paul Wolfowitz.

The letter also called for the G8 to back an international study into the level at which greenhouse gases should be stabilised in the

Drying up: Sub-Saharan Africa, as in Mali here, is already subject to frequent drought conditions but they could become more extensive and damaging under climate change. (Photo: Ariadne Van Zandbergen/Oxford Scientific (OSF).)

Messenger: Robert May, president of Britain's Royal Society, continues to highlight the need for actions to curb greenhouse gas emissions.

atmosphere to avoid dangerous climate change. It suggested that the action plan agreed in Scotland in July "fell far short of a strategy to stop the rise in greenhouse gases in the atmosphere."

Frustration at the lack of action on climate change was expressed by John Lawton, head of Britain's Royal Commission on Environmental Pollution who, in the wake of hurricane Katrina, criticised US policymakers and told journalists he believed the hurricane was a sign of potential climate change.

May's letter also raises similar concerns. His letter says: "Although it is not possible to say that the destructive potentials of hurricanes Katrina, Rita and Wilma were greater because of global warming, a connection is likely and certainly cannot be ruled out.

"As long as greenhouse gas concentrations continue to rise, there is the very real prospect that the increase in aid agreed at Gleneagles will be entirely consumed by the mounting cost of dealing with the added burden of adverse effects of climate change in Africa. In effect, the Gleneagles communique gave hope to Africa with one hand, through a promise of more aid, but took that hope away with the other hand through its failure to address adequately the threat of climate change."

It adds: "Therefore, if the increase in aid and other measures outlined in the Gleneagles action plan on Africa are to create maximum benefit, they must be accompanied by effective action on climate change by stopping the inexorable rise of greenhouse gas levels in the atmosphere."

The letter draws attention to a collection of 17 scientific papers, also published last month, which examine the impact of climate change on crops. It highlights a paper that concludes that rising sea surface temperatures in the Indian Ocean are responsible for a drop in rainfall in Ethiopia since 1996.

The letter points out that that the $200 billion estimated cost of dealing with the impacts of hurricane Katrina is equivalent to 1.7 per cent of the gross domestic product of the United States, compared with estimates that it would cost no more than one per cent of GDP for the country to meet its target under the Kyoto protocol. It concludes: "Clearly dealing with even some of the consequences of climate change, such as more destructive hurricanes, looks more costly than taking measures to reduce greenhouse gas emissions."

Biologists' alarm bells ring louder

A new study suggests that food security may be under greater pressure from climate change. **Nigel Williams** reports.

Much research on climate change suggests a negative impact on many current natural and agricultural ecosystems. But one possibly positive impact has been that excess carbon dioxide and moderate rises in temperature in the atmosphere may boost some crop yields.

Evidence has largely derived from greenhouse experiments or other studies under enclosed conditions and predictions of yield for the globe's major grain and legume arable crops suggest that production may increase somewhat in the temperate zone, but decline in the tropics. In total, global food supply may show little change. This prediction comes from inclusion of the direct effect of rising carbon dioxide concentration, which significantly stimulates yield by decreasing photorespiration in C3 crops and transpiration in all crops.

Evidence for a large response to carbon dioxide has largely been based on studies made within closed environments and on small scales, which would, however, be considered unacceptable for standard agronomic trials of new cultivars or agrochemicals. Yet many predictions of the globe's future food security are based on such information.

But a new report by Stephen Long and colleagues from the University of Illinois and the United States Department of Agriculture Research Service at Urbana, published in the Philosophical Transactions of the Royal Society B, describes a study of plants growing in the open but subject to varying concentrations of greenhouse gases.

The apparatus used by the team comprises a circular or octagonal series of pipes that release the treatment gas, or air